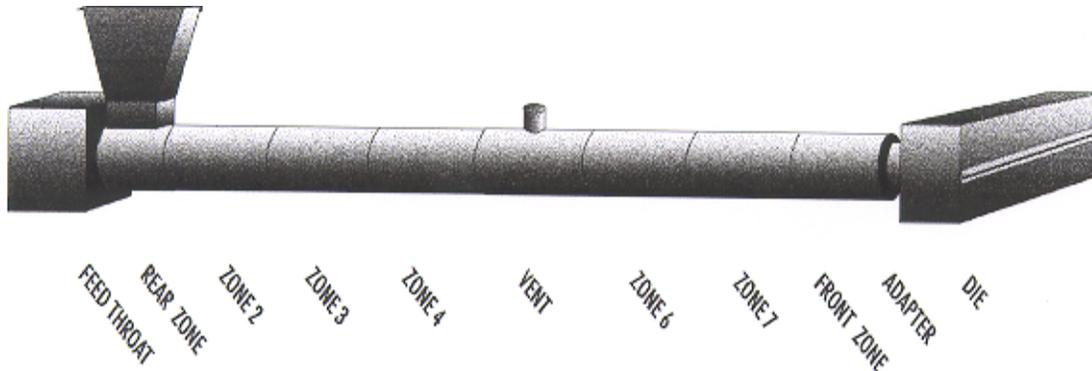


Processing Guide – CX12493 on to PVC Profile

Suggested temperature profile for extruding.

 Suggested extrusion temperature limits
Average extrusion temperatures



Co-Extruder- Acrylic

°C	Feed Throat	Zone 1	Zone 2	Vent Zone	Zone 4	Zone 5	Transfer Pipe
230							
220							
210							
200							
190							
30 to 40							

These temperatures are given as a guide. The optimum processing conditions for a particular extruder vary depending on other specific factors.

General processing Guidelines

Elvakon grades for PVC are formulated to run at a lower temperature range suitable for PVC. CX12493 has an MFI of 5.7 (230c/3.8kg/10min). This grade has been formulated to provide good flow on typical co extrusion equipment at processing temperatures suitable for PVC profile.

To obtain a good cap layer the rheology's of the base and the capping layer polymers need to be as closely matched to one another as possible. To achieve this the temperatures and rates need to be optimised for each machine. The general approach should be to fully melt the acrylic in the co-extruder in the first few zones then cool the melt slightly in the last zones and transfer pipe before it contacts the PVC surface.

The actual degree of acrylic spread and layer uniformity differs for each feed block/ Die setup. To improve the flow of the acrylic layer towards the edge of the profile the following approaches can be used:-

- a. Raise the co extruder barrel temperatures.
- b. Lower the main PVC extruder barrel temperatures.
- c. Slow down both extruders.

The following factors should also be considered for successful co-extrusion:-

1. Drying

If the extruder is not equipped with a vent then the material requires drying before use. It is recommended to dry at 80 centigrade for a minimum of 4 hours before use. Ideally the material should be dried overnight at 75 centigrade.

2. Purging

It is important to purge the co extruder, feed block and die thoroughly before start up. Acrylic is a very effective purge polymer and will remove any residual degraded polymer present in the equipment. Black spec, yellowing and contamination are often purged from the machine when Acrylic materials are used particularly when following styrenic polymers. Purging with acrylic until free from discolouration and contamination is recommended before start up.

3. Machine set up

Particular care should be taken to clean the die and calibrator thoroughly before start up. This is to prevent surface lines on the profile and Acrylic build up inside the calibrator. Sharp edges inside calibrator systems can cause abrasion of the surface. Rounded edges on vac port entry ports within the calibrator are recommended.

4. Venting

For the highest quality product surface, it is recommended that the co extruder is equipped with a vacuum vent. Occasionally the Acrylic can expand in vent ports and cause blockages. It is recommended to run the vent at -0.8bar maximum. Increasing the screw speed and running at higher barrel temperatures can also improve this problem.

6. Colouring

Acrylic can be coloured online with a suitable colour master batch additive system. All colour master batches should be supplied in a suitable acrylic carrier. Ensure the master batch is guaranteed as weatherable if the product is to be used for outdoor applications.

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